

CLAIMS

1. Means for conveying and/or mixing a particulate solid comprising:
a hollow feed tube in which said particulate solids are transported from a first location to a second location; and
auger conveying means within said feed tube comprising a shaft carrying a plurality of flexible elements helically arrayed to form a spiral.
2. A disposable conveying means of claim 1.
3. The conveying means of claim 1 including means for rotating said auger conveying means such that the particles of said solid are conveyed by said flexible elements from said first location to said second location.
4. The conveying means of claim 1 wherein said spiral has a diameter greater than the inside diameter of the feed tube.
5. The conveying means of claim 1 wherein said feed tube is cylindrical.
6. The conveying means of claim 5 wherein said feed tube is positioned substantially horizontally.
7. The conveying means of claim 1 wherein said first location includes a container for holding a supply of said particulate solids.

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8. The conveying means of claim 7 wherein said container is a hopper coupled to said feed tube by means for metering said particulate solids into said feed tube.
9. The conveying means of claim 8 wherein coupling means is a tube extending from an outlet of said hopper into said feeder tube.
10. The conveying means of claim 8 wherein the axis of the hopper is perpendicular to the axis of the feed tube.
11. The conveying means of claim 8 also including means for vibrating said hopper to facilitate the metering of said particulate solids into said feed tube.
12. The conveying means of claim 1 wherein said flexible elements are sufficiently flexible to bend without permanently deforming or breaking during rotation within said feeder tube but sufficiently rigid to convey said particulate solids through said feeder tube without substantial agglomeration, or degradation of the chemical or physical properties or particle sizes thereof.
13. The conveying means of claim 12 wherein said flexible means are adapted to convey a particulate solid having a particle size of less than about 400 microns.
14. The conveying means of claim 1 wherein said flexible elements are bristles.
15. The conveying means of claim 1 wherein said second location is an outlet from said feeder tube.

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16. The conveying means of claim 3 including means for controlling the rate of auger conveyor rotation.

17. An article of manufacture comprising means for conveying and/or mixing particulate solids, wherein said conveying means is effective for the conveyance of particulate solids, and wherein said article includes instructions for using said conveying means for conveying and/or mixing particulate solids, and wherein said conveying means is that of claim 1.

18. The article of manufacture of claim 17 wherein said particulate solid is a pharmaceutical composition.

19. The article of manufacture of claim 17 wherein said particulate solid is microcrystalline cellulose.

20. A method of delivering particulate solids from a first location to a second location or admixing said solids, the method comprising transporting said particulate solids through a feeder tube positioned between said locations by rotating an auger conveying means positioned in said feeder tube, said auger conveying means having a helical flight of flexible elements, the rotational motion of the auger conveying means causing the flexible elements to carry the particulate solids between said locations; the flexibility of said flexible elements preventing any substantial agglomeration, or degradation of the chemical or physical properties or particle sizes of said particulate solids.

21. The method of claim 20 including controlling the rate of auger conveyor rotation.

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22. In a method of delivering particulate solids from a first location to a second location or admixing said solids, the method comprising transporting said particulate solids through a feeder tube positioned between said locations by rotating an auger conveying means positioned in said feeder tube, said auger conveying means having a helical flight of flexible elements, the rotational motion of the auger conveying means causing the flexible elements to carry the particulate solids between said locations; the flexibility of said flexible elements preventing any substantial agglomeration, or degradation of the chemical or physical properties or particle sizes of said particulate solids, the improvement comprising disposing of said feeding tube and auger conveying means following said delivering or admixing.

23. A means for determining the dispersibility and/or flowability distribution of particulate solids comprising the means of claim 1 and means for measuring the flow rate of said particulate solids through said feeder tube.

24. A method for determining the dispersibility and/or flowability distribution of particulate solids comprising transporting said particulate solids through a feeder tube positioned between two locations by rotating an auger conveying means positioned in said feeder tube, said auger conveying means having a helical flight of flexible elements, the rotational motion of the auger conveying means causing the flexible elements to carry the particulate solids between said locations and measuring the flow rate of said particulate solids through said feeder tube.

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25. A means according to claim 1 wherein said flexible elements are constructed of an electrically conductive material and said means is electrically grounded to avoid electrostatic build-up in said particles.